

Amendments to the Specification:

Please replace the paragraph beginning at page 3, line 16 with the following rewritten paragraph:

In order to minimise variation in width of the flat web formed in step (ii), in a preferred embodiment during feeding of the tubing, the tubing is tracked to ensure that it is substantially centrally slit along its length. More particularly, the tubing is advantageously centrally slit along its upper or lower surfaces as illustrated in ~~Diagram 2.2~~ Figure 4, although it may be possible to slit the tubing material along one of its edges to form the flat web as illustrated in ~~Diagram 2.4~~ Figure 3.

Please replace the paragraph beginning at page 3, line 22 with the following rewritten paragraph:

After the slitting and unfolding of the tubing to form the flat web, the flat web of packaging material is formed around the product which is to be packaged and is longitudinally sealed to substantially reform the tubing originally fed from the supply. Due to the deviation in width of the flat web, on longitudinal sealing to reform the tubing, it will be recognised that there will be at least some excess packaging material along the longitudinal seal. Therefore, in a preferred embodiment, prior to or during the longitudinal sealing of the packaging material in step (iii), the packaging material is trimmed along its slit edges formed in step (ii) to remove excess packaging material therefrom. This trimming of the edge of the film is completed by a knife or shearing apparatus. The trimming function allows control of the amount of excess material outside the longitudinal seal as illustrated in ~~Diagram 3.4~~ Figure 5.

Please replace the paragraph beginning at page 6, line 21 with the following rewritten paragraph:

The invention will now be described in more detail with reference to the accompanying ~~diagrams~~ drawings in which:

~~Diagram 1.1~~ Figure 1 illustrates a conventional form, fill and seal packaging apparatus;
~~Diagram 1.2~~ Figure 2 illustrates an embodiment of the form, fill and seal packaging apparatus according to the invention;
~~Diagram 2.1~~ Figure 3 illustrates the slitting and unfolding of the fed tubing material by slitting one edge thereof;
~~Diagram 2.2~~ Figure 4 illustrates the slitting and unfolding of the tubing material by slitting centrally on one face thereof;
~~Diagram 3.1~~ Figure 5 illustrates the trimming of excess edge material;
~~Diagram 4.1~~ Figure 6 illustrates the configuration of the packaging apparatus of the invention; and
~~Diagram 5.1~~ Figures 7A to 7C illustrate the transverse sealing sequence used in accordance with embodiments of the invention.

Please replace the paragraph beginning at page 7, line 5 with the following rewritten paragraph:

Referring to ~~Diagram 1.1~~ Figure 1, a conventional form, fill and seal packaging apparatus 10 feeds a single wound material from a roll ~~(B)~~ 12. The film is unwound from the roll ~~(B)~~ 12 and fed into the apparatus by a passive or powered unwind mechanism (not shown). Calendering of the unwound film is conducted in a calendering zone ~~(C)~~ 14 where the material is adapted to ensure that it is supplied to the feed area of the apparatus at a consistent tension and angle.

Please replace the paragraph beginning at page 7, line 10 with the following rewritten paragraph:

Product to be packaged ~~(D)~~ 16 is fed by a conveyor belt under the web of material to a forming device ~~(E)~~ 18, commonly referred to as a forming box or forming shoe. The forming device ~~(E)~~ 18 wraps the flat web of material around the incoming product ~~(D)~~ 16 so that the flat web of material forms a tubular shape around the product. The material, when wrapped around the incoming product ~~(D)~~ 16 may be folded in a manner which fa-

cilitates the production of a longitudinal seal. This may be achieved, for example, by forming a fin ~~(F)~~ 20 or a lap in the material.

Please replace the paragraph beginning at page 7, line 17 with the following rewritten paragraph:

After wrapping of the flat web of material around the incoming product ~~(D)~~ 16, a longitudinal seal is made in the material by a longitudinal sealing device ~~(G)~~ 22 to seal the two edges of the wrapped material together to form a complete tube.

Please replace the paragraph beginning at page 7, line 20 with the following rewritten paragraph:

When the complete tube is formed around the product, an end sealing device ~~(A)~~ 24 is used to seal the tube and cut the tube between successive products ~~(D)~~ 16 to form a finished packaged product ~~(H)~~ 26.

Please replace the paragraph beginning at page 7, line 23 with the following rewritten paragraph:

As discussed earlier, these conventional form, fill and seal packaging apparatuses are limited due to the limitations in the maximum possible widths of the flat sheets fed from the roll ~~(B)~~ 12.

Please replace the paragraph beginning at page 7, line 26 with the following rewritten paragraph:

The invention, however, as illustrated in ~~Diagram 1.2~~ Figure 2, feeds a tubing material ~~(J)~~ 30 from a roll ~~(K)~~ 32 of packaging material in an integral tubing form. In this case, the apparatus is provided with a slitting and unfolding device ~~(L)~~ 34 which makes a continuous cut in the tubing material ~~(J)~~ 30 and folds or forms the cut tubing material into a

flat sheet 36. The slitting and unfolding device 34 uses a set of geometric plates and frames to ensure the alignment of the material does not vary in the process.

Please replace the paragraph beginning at page 8, line 2 with the following rewritten paragraph:

As will be seen in ~~Diagram 1.2~~ Figure 2, the following calendering of the slit and unfolded material is achieved by a pair of sprung clamped rollers in a calendering zone ~~(G)~~ 38. The remaining packaging of the product ~~(D)~~ 16 by a forming device ~~(E)~~ 18, longitudinal sealing device ~~(G)~~ 22 and end sealing device ~~(A)~~ 24 may be conducted in line with conventional methods.

Please replace the paragraph beginning at page 8, line 6 with the following rewritten paragraph:

Referring to ~~Diagrams 2.1~~ Figures 3 and 4 ~~2.2~~, the slitting and unfolding device 34 generally comprises a back unfolding plate ~~(1.1)~~ 40 and a front unfolding plate ~~(1.2)~~ 42 for Figure 3, and a back unfolding plate 41 and a front unfolding plate 43 for Figure 4.

Please replace the paragraph beginning at page 8, line 8 with the following rewritten paragraph:

In ~~Diagram 2.1~~ Figure 3, the tubing material is slit along one edge thereof by the slitting and unfolding device 34. In this regard, the raw tubing material ~~(A)~~ 30 is fed into the device and slit at an edge slitting point ~~(B)~~ 46. Following slitting of the tubing material, the back layer ~~(C)~~ 48 of the film folds to travel 90° from the original infeed path, and the front layer ~~(D)~~ 50 of the film travels in a direct path. The back layer of the film travelling at 90° from the original infeed path ~~(E)~~ 52 travels between the front unfolding plate ~~(1.2)~~ 42 and the back unfolding plate ~~(1.1)~~ 40 until it is folded to travel at 180° ~~(F)~~ 54 from the original infeed path. Following this operation, a final single web of film ~~(G)~~ 36 exits the slitting and unfolding device at 180° from the original infeed path of the tubing material.

Please replace the paragraph beginning at page 8, line 17 with the following rewritten paragraph:

It should be noted that the angle (H) 56 of the back and front unfolding plates (1.1, 1.2) 40,42 are identical angles between 30° and 60°.

Please replace the paragraph beginning at page 8, line 19 with the following rewritten paragraph:

The slitting and unfolding device illustrated in ~~diagram 2.2~~ Figure 4 utilizes the central slitting of the tubing material (A) 30.

Please replace the paragraph beginning at page 8, line 21 with the following rewritten paragraph:

In this case, a central slitting point (B) 60 is provided on the back face of the tubing material (A) 30. The back layer of the slit film (C) 62 is then folded to travel at 90° from the original infeed path. The front layer (D) 64 of the film travels in a direct path. As was the case in ~~Diagram 2.1~~ Figure 3, the back layer of film travelling at 90° from the original infeed path (E) 62 passes between the front unfolding plate (1.2) 43 and the back unfolding plate (1.1) 41. The back layer of the film is then folded to travel at 180° (F) 66 from the original infeed path. The final single web of film (G) 36 exits the slitting and unfolding device at 180° from the original infeed path of the tubing (A) 30.

Please replace the paragraph beginning at page 8, line 29 with the following rewritten paragraph:

As was the case in ~~Diagram 2.1~~ Figure 3, the angles (H) provided by the plates are identical angles between 30° and 60°.

Please replace the paragraph beginning at page 9, line 1 with the following rewritten paragraph:

Referring to ~~Diagram 3.4~~ Figure 5, excess material (~~E~~) 70 is advantageously trimmed from the packaging material at a point (~~G~~) 72, and a longitudinal seal (~~D~~) 74 applied to the trimmed material to complete the tube. This procedure advantageously removes inconsistent edges (~~B~~) 76 of the packaging material generally present due to inconsistencies and variations during the manufacture of the tubing material.

Please replace the paragraph beginning at page 9, line 6 with the following rewritten paragraph:

A further illustration of the packaging apparatus according to the invention is provided in ~~Diagram 4.4~~ Figure 6. As illustrated in this ~~diagram~~ drawing, the tubing material is unwound from a roll (~~B~~) 80 and slit and unfolded using a slitting and unfolding device (~~C~~) 82. The slit and unfolded material is then fed as a single web 84 to a tensioning and feeding calender (~~D~~) 86 and then onto a forming or folding box (~~E~~) 88. After forming or folding of the single web material by the forming or folding box (~~E~~) 88, product (~~A~~) 90 is fed into the formed material and an edged trimming device (~~F~~) 92 used to trim the edges of the material. Following this, a longitudinal sealing device (~~G~~) 94 is used to seal the material to form a complete tube. Scrap or edge trim material is removed by a suitable waste removal device (~~H~~) 96.

Please replace the paragraph beginning at page 9, line 15 with the following rewritten paragraph:

Sealing of the formed tubing material about the product (~~A~~) 90 is conducted by means of a pair of transverse sealing jaws (~~J~~) 98 which are mounted for complementary movement towards each other. These jaws may either form a pair of transverse seals and cut the tubing material between the pair of seals, or may seal only one side of the tubing material and cut the material adjacent the seal. In the first case, the product (~~A~~) 90 is completely enclosed as the final package (~~L~~) 100, whereas in the second instance the product (~~A~~) 90 is conveyed out of the apparatus in an open bag as the final package (~~L~~) 100.

Please replace the paragraph beginning at page 9, line 22 with the following rewritten paragraph:

In any event, the product ~~(A)~~ 90 is conveyed by means of a main transport conveyor belt ~~(K)~~ 102, and the packaging of the product ~~(A)~~ 90 controlled by a machine control panel ~~(M)~~ 104.

Please replace the paragraph beginning at page 9, line 24 with the following rewritten paragraph:

As previously discussed, the apparatus preferably includes sensors (not shown) which determine the position of the product ~~(A)~~ 90 relative to the sealing jaws ~~(J)~~ 98 so as to determine operation of the sealing jaws ~~(J)~~ 98 to seal between subsequent products ~~(A)~~ 90.

Please replace the paragraph beginning at page 9, line 27 with the following rewritten paragraph:

The transverse sealing sequence is better illustrated in ~~Diagram 5-4~~ Figures 7A to 7C. The sequence includes the lowering of the jaws ~~(A, B)~~ 106, 108 toward the material ~~(C)~~ 109 until the jaws are in a closed position. In this position, sealing means ~~(D)~~ 110 on each jaw ~~(A, B)~~ form a pair of longitudinal seals in the material ~~(C)~~ 109. Simultaneously, a blade ~~(E)~~ 112 forms a cut in the material between the pair of seals formed by the sealing means ~~(D)~~ 110. The sealing means ~~(D)~~ 110 may include conventional means such as thermal bands.